

DATE: 05/20/2003

TIME: 17:26:37

MAY 2 7 2003
TECH CENTER 1600/2900

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/848,909A

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- 4 <110> APPLICANT: Collier, R. John
         Sellman, Brett R.
  7 <120> TITLE OF INVENTION: Compounds and Methods for the Treatment
. 8 and Prevention of Bacterial Infection
 11 <130> FILE REFERENCE: 00742/060002
 13 <140> CURRENT APPLICATION NUMBER: US 09/848,909A
 14 <141> CURRENT FILING DATE: 2001-05-04
 16 <150> PRIOR APPLICATION NUMBER: US 60/201,800
 17 <151> PRIOR FILING DATE: 2000-05-04
 19 <160> NUMBER OF SEQ ID NOS: 35
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 23 <210> SEQ ID NO: 1
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 33 Met Val Val Thr Ser Ser Thr Thr Gly Asp Leu Ser Ile Pro Ser Ser
                                  40
 35 Glu Leu Glu Asn Ile Pro Ser Glu Asn Gln Tyr Phe Gln Ser Ala Ile
                             55
                                                   60
 37\ \mathrm{Trp}\ \mathrm{Ser}\ \mathrm{Gly}\ \mathrm{Phe}\ \mathrm{Ile}\ \mathrm{Lys}\ \mathrm{Val}\ \mathrm{Lys}\ \mathrm{Ser}\ \mathrm{Asp}\ \mathrm{Glu}\ \mathrm{Tyr}\ \mathrm{Thr}\ \mathrm{Phe}\ \mathrm{Ala}
                     70
                                              7.5
 39 Thr Ser Ala Asp Asn His Val Thr Met Trp Val Asp Asp Gln Glu Val
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                                          90
 41 Ile Asn Lys Ala Ser Asn Ser Asn Lys Ile Arg Leu Glu Lys Gly Arg
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 43 Leu Tyr Gln Ile Lys Ile Gln Tyr Gln Arg Glu Asn Pro Thr Glu Lys
    115
                                 120
                                                       125
 45 Gly Leu Asp Phe Lys Leu Tyr Trp Thr Asp Ser Gln Asn Lys Lys Glu
                             135
 47 Val Ile Ser Ser Asp Asn Leu Gln Leu Pro Glu Leu Lys Gln Lys Ser
 48 145
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 49 Ser Asn Ser Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val Pro
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                                       170
 51 Asp Arg Asp Asn Asp Gly Ile Pro Asp Ser Leu Glu Val Glu Gly Tyr
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                                    185
 53 Thr Val Asp Val Lys Asn Lys Arg Thr Phe Leu Ser Pro Trp Ile Ser
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 55 Asn Ile His Glu Lys Lys Gly Leu Thr Lys Tyr Lys Ser Ser Pro Glu
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DATE: 05/20/2003 PATENT APPLICATION: US/09/848,909A TIME: 17:26:37

Input Set : A:\00742.060002.SEQLIST.TXT Output Set: N:\CRF4\05202003\I848909A.raw

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60		58	225					230					235					240
60		59	Glv	Arg	Ile	Asp	Lys	Asn	Val	Ser	Pro	Glu	Ala	Arq	His	Pro	Leu	Val
61 Ala Ala Tyr Pro Ile Val His Val Asp Met Glu Asn Ile Ile Leu Ser 62			2			•	_							_				
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64			Lvc	Nen	Glu		Gln	Sar	Thr	Gln		Thr	Aen	Sar	Glu		Ara	Thr
. 65   1le   Ser   Lys   Asn   Thr   Ser   Thr   Ser   Arg   Thr   His   Thr   Ser   Glu   Val   His   66   290   295   300   300   300   315   320   320   335   320   335   320   335   320   335   320   335   320   335   320   335   320   335   320   325   325   320   325   325   320   325			цуз	HOII		изъ	GLII	Jei	1111		HSII	1111	АЗР	Ser		1111	Arg	1111
66 290 295 300 300 300 315 320 316 310 315 320 68 305 310 315 320 315 320 69 Ser Ala Glu Val His Ala Ser Phe Phe Asp Ile Gly Gly Ser Val As Ala Gly Phe Ser Asn Ser Asn Ser Ser Thr Val Ala Ile Asp His 320 325 330 335 335 335 335 335 335 335 335 33			-1-	Q	_	7	mъ	C	m1		7	ml	111.	m\		C1	57 - 7	77.5 -
67 Gly Asn Ala Glu Val His Ala Ser Phe Phe Asp Ile Gly Gly Ser Val 68 305 310 315 320 69 Ser Ala Gly Phe Ser Asn Ser Asn Ser Ser Thr Val Ala Ile Asp His 70 325 330 335 71 Ser Leu Ser Leu Ala Gly Glu Arg Thr Trp Ala Glu Thr Met Gly Leu 72 340 345 73 Asn Thr Ala Asp Thr Ala Arg Leu Asn Ala Asn Ile Arg Try Val Asn 74 355 75 Thr Gly Thr Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val 76 370 375 380 77 Leu Gly Lys Asn Gln Thr Leu Ala Thr Ile Lys Ala Ala Glu Asn Gln 8 385 390 390 395 400 79 Leu Ser Gln Ile Leu Asn Ala Gln Asp Asp Phe Ser Ser Thr Pro Ile 80 410 415 81 Ala Pro Ile Ala Leu Asn Ala Gln Asp Asp Phe Ser Ser Thr Pro Ile 82 420 83 Thr Met Asn Tyr Asn Gln Phe Leu Glu Leu Glu Lys Thr Lys Gln Leu 84 435 85 Arg Leu Asp Thr Asp Gln Val Tyr Gly Asn Ile Ala Thr Tyr Asn Phe 86 450 455 460 87 Glu Asn Gly Arg Val Arg Val Asp Thr Gly Ser Asn Trp Ser Glu Val 88 465 89 Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys 90 485 91 Asp Leu Asn Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp 510 93 Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Gln Ala Leu Lys 94 550 550 550 575 576 101 Val Leu Asp Lys Ile Lys Leu Asn Ala Gly Asn Ile Ala Thr Tyr Gln Gly 95 103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp	•		тте		гуѕ	ASI	Thr	ser		ser	Arg	Thr	HIS		ser	GIU	val	HIS
68 305   310   315   320     69 Ser Ala Gly Phe Ser Asn Ser Asn Ser Ser Thr Val Ala Ile Asp His 300     70							<b>-</b>						_				_	
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72       340       345       350         73       Asn Thr Ala Asp Thr Ala Asp Thr Ala Arg Leu Asn Ala Asn Ile Arg Tyr Val Asn 365       360       365         75       Thr Gly Thr Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val 375       380       375       380         75       Thr Gly Thr Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val 380       380       375       380         77       Leu Gly Lys Asn Gln Thr Leu Ala Pro Asn Asn Tyr Tyr Pro Ser Lys Asn Leu 400       400       400         79       Leu Ser Gln Ile Leu Ala Pro Asn Asn Tyr Tyr Pro Ser Lys Asn Leu 405       410       415         81       Ala Pro Ile Ala Leu Asn Ala Gln Asp Asp Phe Ser Ser Thr Pro Ile 420       425       430         83       Thr Met Asn Tyr Asn Gln Phe Leu Glu Leu Glu Lys Thr Lys Gln Leu 445       445         85       Arg Leu Asp Thr Asp Gln Val Tyr Gly Asn Ile Ala Thr Tyr Asn Phe 450       460         87       Glu Asn Gly Arg Val Arg Val Asp Thr Gly Ser Asn Trp Ser Glu Val 486       450         89       Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys 485       490         90       485       490       495         91       Asp Leu Asn Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp 500       500         92       500       505       500         93       Pro Leu Glu Th		70					325					330					335	
73 Asn Thr Ala Asp Thr Ala Arg Leu Asn Ala Asn Ile Arg Tyr Val Asn 355		71	Ser	Leu	Ser	Leu	Ala	Gly	Glu	Arg	Thr	Trp	Ala	Glu	Thr	Met	Gly	Leu
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75 Thr Gly Thr Ala Pro Ile Tyr Asn Val Leu Pro Thr Thr Ser Leu Val 76									9							- 1 -		
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77 Leu Gly Lys Asn Gln Thr Leu Ala Thr Ile Lys Ala Ala Glu Asn Gln 78 385			TIIL	-	1111	Ата	FIO	116	-	ASII	vai	пеи	FIO		TIII	Ser	ьец	Val
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80						_												
81 Ala Pro Ile Ala Leu Asn Ala Gln Asp Asp Phe Ser Ser Thr Pro Ile 82		79	Leu	Ser	Gln	Ile	Leu	Ala	Pro	Asn	Asn	Tyr	Tyr	Pro	Ser	Lys	Asn	Leu
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86       450       455       460         87       Glu Asn Gly Arg Val Arg Val Arg Val Asp Thr Gly Ser Asn Trp Ser Glu Val       480         88       465       470       475       480         89       Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys       490       495         91       Asp Leu Asn Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp       500       505       510         93       Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys       510       520       525         95       Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly       535       540         97       Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln       580       555       560         99-Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr       100       565       570       575         101       Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg       580       585       590         103       Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		85	Ara	Leu	Asp	Thr	Asp	Gln	Val	Tvr	Glv	Asn	Ile	Ala	Thr	Tvr	Asn	Phe
87 Glu Asn Gly Arg Val Arg Val Asp Thr Gly Ser Asn Trp Ser Glu Val 88 465			9							-1-	1					- 1 -		
88 465       470       475       480         89 Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys       485       490       495         91 Asp Leu Asn Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp       500       505       510         93 Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys       525       525         95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly       535       540         97 Lys Asp Ile Thr Glu Phe Asp Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln       550       555       560         99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr       100       565       570       575         101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg       102       580       585       590         103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp       590       103       590       103			Glu		G1 v	Δrα	Val	Δra		Aen	Thr	G) v	Sar		Trn	Sar	Glu	Val
89 Leu Pro Gln Ile Gln Glu Thr Thr Ala Arg Ile Ile Phe Asn Gly Lys 90				7311	OLY	Arg	vai		vai	пэр	1111	GIY		ASII	тър	Ser	GIU	
90				Dwo	C1-	т1.	C1 =		mb w	mb ~	7.1.	70		T1.	Dho	7	C1	
91 Asp Leu Asn Leu Val Glu Arg Arg Ile Ala Ala Val Asn Pro Ser Asp 92 500 505 510  93 Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys 94 515 520 525  95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly 96 530 535 540  97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560  99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr 100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp			ьец	PIO	GIII	тте		GIU	1111	1111	Ald	_	тте	тте	Pne	ASII	-	гуѕ
92 500 505 510  93 Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys 94 515 520 525  95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly 96 530 535 540  97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560  99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr 100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp			_	_	_	_		~ .	_	_	_,				_ `	_		_
93 Pro Leu Glu Thr Thr Lys Pro Asp Met Thr Leu Lys Glu Ala Leu Lys 94 515 520 525 95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly 96 530 535 540 97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560 99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr 100 565 570 575 101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590 103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp			Asp	Leu	Asn		Val	Glu	Arg	Arg		Ala	Ala	Val	Asn		Ser	Asp
94 515 520 525  95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly 96 530 535 540  97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560  99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr 100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp																		
95 Ile Ala Phe Gly Phe Asn Glu Pro Asn Gly Asn Leu Gln Tyr Gln Gly 96 530 535 540  97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560  99 Asn Ile Lys Asn Gln Leu Ala Glu Leu Asn Ala Thr Asn Ile Tyr Thr 100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		93	Pro	Leu	Glu	Thr	Thr	Lys	Pro	Asp	Met	Thr	Leu	Lys	Glu	Ala	Leu	Lys
96       530       535       540         97       Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln         98       545       550       555       560         99-Asn-Ile-Lys-Asn-Gln-Leu-Ala-Glu-Leu-Asn-Ala-Thr-Asn-Ile-Tyr-Thr       100       565       570       575         101       Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg       102       580       585       590         103       Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		94			515					520					525			
97 Lys Asp Ile Thr Glu Phe Asp Phe Asn Phe Asp Gln Gln Thr Ser Gln 98 545 550 555 560  99 Asn_Ile_Lys_Asn_Gln_Leu_Ala_Glu_Leu_Asn_Ala_Thr_Asn_Ile_Tyr_Thr 100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		95	Ile	Ala	Phe	Gly	Phe	Asn	Glu	Pro	Asn	Gly	Asn	Leu	Gln	Tyr	Gln	Gly
98 545 550 555 560  99 Asn_Ile_Lys_Asn_Gln_Leu_Ala_Glu_Leu_Asn_Ala_Thr_Asn_Ile_Tyr_Thr  100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		96		530					535					540				
98 545 550 555 560  99 Asn_Ile_Lys_Asn_Gln_Leu_Ala_Glu_Leu_Asn_Ala_Thr_Asn_Ile_Tyr_Thr  100 565 570 575  101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590  103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp		97	Lys	Asp	Ile	Thr	Glu	Phe	Asp	Phe	Asn	Phe	Asp	Gln	Gln	Thr	Ser	Gln
99_Asn_Ile_Lys_Asn_Gln_Leu_Ala_Glu_Leu_Asn_Ala_Thr_Asn_Ile_Tyr_Thr			_						-				_					
100       565       570       575         101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg       102 580       585       590         103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp				Ile.	Lvs.	Asn_	-Gl-n-	Leu-	Ala.	-G-1-11-	Leu-	-Asn-		Thr	-Asn-	_T_1-e-	-T-v-r-	
101 Val Leu Asp Lys Ile Lys Leu Asn Ala Lys Met Asn Ile Leu Ile Arg 102 580 585 590 103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp					-,					J_ u							<u>-</u>	
102 580 585 590 103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp				Lar	ι Δer	1.17c			. T.a.ı	ı Acr	. Δ1 =			- Aer	. T14	LOI		
103 Asp Lys Arg Phe His Tyr Asp Arg Asn Asn Ile Ala Val Gly Ala Asp				nec	· vol			. шys	, nec	ı rışı			, 176	- noi	1, 116			ura
				. T	. 7\			. m	. 7	. 7\			. Tl-	. 7.1 -				7.~~
104 595 600				υγу			: H15	э туг	. AS			ı ASI	1 176	: ATS			/ Ala	a Asp
		104	ł		595	)				600	,				605	)		

DATE: 05/20/2003 PATENT APPLICATION: US/09/848,909A TIME: 17:26:37

Input Set : A:\00742.060002.SEQLIST.TXT Output Set: N:\CRF4\05202003\I848909A.raw

```
105 Glu Ser Val Val Lys Glu Ala His Arg Glu Val Ile Asn Ser Ser Thr
106 610 615
                            620
107 Glu Gly Leu Leu Asn Ile Asp Lys Asp Ile Arg Lys Ile Leu Ser
108 625 630
                          635
109 Gly Tyr Ile Val Glu Ile Glu Asp Thr Glu Gly Leu Lys Glu Val Ile
     645
                              650
111 Asn Asp Arg Tyr Asp Met Leu Asn Ile Ser Ser Leu Arg Gln Asp Gly
112 660
                             665
113 Lys Thr Phe Ile Asp Phe Lys Lys Tyr Asn Asp Lys Leu Pro Leu Tyr
. 114 675 680
115 Ile Ser Asn Pro Asn Tyr Lys Val Asn Val Tyr Ala Val Thr Lys Glu
                       695
, 117 Asn Thr Ile Ile Asn Pro Ser Glu Asn Gly Asp Thr Ser Thr Asn Gly
118 705 710
                                    715
119 Ile Lys Lys Ile Leu Ile Phe Ser Lys Lys Gly Tyr Glu Ile Gly
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123 <210> SEQ ID NO: 2
124 <211> LENGTH: 735
125 <212> TYPE: PRT
126 <213> ORGANISM: Bacillus anthracis
128 <400> SEQUENCE: 2
129 Glu Val Lys Gln Glu Asn Arg Leu Leu Asn Glu Ser Glu Ser Ser Ser
                                 10
131 Gln Gly Leu Leu Gly Tyr Tyr Phe Ser Asp Leu Asn Phe Gln Ala Pro
132 20
                             2.5
133 Met Val Val Thr Ser Ser Thr Thr Gly Asp Leu Ser Ile Pro Ser Ser
134 35
                         40
                                          45
135 Glu Leu Glu Asn Ile Pro Ser Glu Asn Gln Tyr Phe Gln Ser Ala Ile
136 50
                      5.5
                                       60
137 Trp Ser Gly Phe Ile Lys Val Lys Lys Ser Asp Glu Tyr Thr Phe Ala
                    70
139 Thr Ser Ala Asp Asn His Val Thr Met Trp Val Asp Asp Gln Glu Val
                                 90
                8.5
141 Ile Asn Lys Ala Ser Asn Ser Asn Lys Ile Arg Leu Glu Lys Gly Arg
            100
                             105
                                             110
143 Leu Tyr Gln Ile Lys Ile Gln Tyr Gln Arg Glu Asn Pro Thr Glu Lys
144 115 120
                                          125
145 Gly Leu Asp Phe Lys Leu Tyr Trp Thr Asp Ser Gln Asn Lys Lys Glu
146 130 135
                                       140
147 Val Ile Ser Ser Asp Asn Leu Gln Leu Pro Glu Leu Lys Gln Lys Ser
148 145 150
                                  155
149 Ser Asn Ser Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val Pro
                                170 175
150 165
151—Asp-Arg-Asp-Asn-Asp-Gly-Ile-Pro-Asp-Ser-Leu-Glu-Val-Glu-Gly-Tyr-
152 180 185
153 Thr Val Asp Val Lys Asn Lys Arg Thr Phe Leu Ser Pro Trp Ile Ser
154 195 200
155 Asn Ile His Glu Lys Lys Gly Leu Thr Lys Tyr Lys Ser Ser Pro Glu
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                                       220
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PATENT APPLICATION: US/09/848,909A

DATE: 05/20/2003 TIME: 17:26:37

Input Set : A:\00742.060002.SEQLIST.TXT
Output Set: N:\CRF4\05202003\1848909A.raw

		Lys 225	Trp	Ser	Thr	Ala	Ser 230	Asp	Pro	Tyr	Ser	Asp 235	Phe	Glu	Lys	Val	Thr 240
			Arg	Ile	Asp	Lys 245		Val	Ser	Pro	Glu 250		Arg	His	Pro	Leu 255	
		Ala	Ala	Tyr	Pro 260		Val	His	Val	Asp 265		Glu	Asn	Ile	Ile 270		Ser
		Lys	Asn	Glu 275		Gln	Ser	Thr	Gln 280		Thr	Asp	Ser	Glu 285		Arg	Thr
		Ile	Ser 290		Asn	Thr	Ser	Thr 295		Arg	Thr	His	Thr 300		Glu	Val	His
•	167	Gly 305		Ala	Glu	Val	His 310	Ala	Ser	Phe	Phe	Asp 315	Ile	Gly	Gly	Ser	Val 320
à	169 170	Ser	Ala	Gly	Phe	Ser 325	Asn	Ser	Asn	Ser	Ser 330	Thr	Val	Ala	Ile	Asp 335	His
	171 172	Ser	Leu	Ser	Leu 340	Ala	Gly	Glu	Arg	Thr 345	Trp	Ala	Glu	Thr	Met 350	Gly	Leu
	173 174	Asn	Thr	Ala 355	Asp	Thr	Ala	Arg	Leu 360	Asn	Ala	Asn	Ile	Arg 365	Tyr	Val	Asn
	175 176	Thr	Gly 370	Thr	Ala	Pro	Ile	Tyr 375		Val	Leu	Pro	Thr 380	Thr	Ser	Leu	Val
	178	385	_	_			390	Leu				395		_			400
	180					405		Pro			410					415	
	181 182	Ala	Pro	Ile	Ala 420	Leu	Asn	Ala	Gln	Asp 425	Asp	Phe	Ser	Ser	Thr 430	Pro	Ile
	184			435	-			Phe	440				_	445	-		
	186		450					Val 455					460				
	188	465					470	Val				475					480
	190					485		Thr			490					495	_
	192				500			Arg	_	505					510		_
	194			515				Pro	520				_	525			_
	196		530					Glu 535			_		540		_		-
	198	545					550	Asp Ala				555					560
_	200	VOII	116	пуэ				Ala								-5-7-5-	
		Val	Leu	Asp				Leu									
	204			595				Asp	600					605	_		_
	205	Glu	Ser	Val	Val	Lys	Glu	Ala	His	Arg	Glu	Val	Ile	Asn	Ser	Ser	Thr

DATE: 05/20/2003 PATENT APPLICATION: US/09/848,909A TIME: 17:26:37

Input Set : A:\00742.060002.SEQLIST.TXT Output Set: N:\CRF4\05202003\I848909A.raw

```
610
                          615
 206
 207 Glu Gly Leu Leu Asn Ile Asp Lys Asp Ile Arg Lys Ile Leu Ser
            630
                                       635
 209 Gly Tyr Ile Val Glu Ile Glu Asp Thr Glu Gly Leu Lys Glu Val Ile
                  645
                                    650
 211 Asn Asp Arg Tyr Asp Met Leu Asn Ile Ser Ser Leu Arg Gln Asp Gly
              660
                                 665
 213 Lys Thr Phe Ile Asp Phe Lys Lys Tyr Asn Asp Lys Leu Pro Leu Tyr
 214 675
                             680
. 215 Ile Ser Asn Pro Asn Tyr Lys Val Asn Val Tyr Ala Val Thr Lys Glu
       690
                          695
                                            700
 217 Asn Thr Ile Ile Asn Pro Ser Glu Asn Gly Asp Thr Ser Thr Asn Gly
218 705
                      710
                                        715
 219 Ile Lys Lys Ile Leu Ile Phe Ser Lys Lys Gly Tyr Glu Ile Gly
                  725
                                     730
 223 <210> SEQ ID NO: 3
 224 <211> LENGTH: 735
 225 <212> TYPE: PRT
 226 <213> ORGANISM: Bacillus anthracis
 228 <400> SEQUENCE: 3
 229 Glu Val Lys Gln Glu Asn Arg Leu Leu Asn Glu Ser Glu Ser Ser Ser
                5
                                     10
 231 Gln Gly Leu Leu Gly Tyr Tyr Phe Ser Asp Leu Asn Phe Gln Ala Pro
      20
                                 25
 233 Met Val Val Thr Ser Ser Thr Thr Gly Asp Leu Ser Ile Pro Ser Ser
 234 35
                             40
                                                4.5
 235 Glu Leu Glu Asn Ile Pro Ser Glu Asn Gln Tyr Phe Gln Ser Ala Ile
                          55
 237 Trp Ser Gly Phe Ile Lys Val Lys Ser Asp Glu Tyr Thr Phe Ala
                      70
 239 Thr Ser Ala Asp Asn His Val Thr Met Trp Val Asp Asp Gln Glu Val
 240
                                     90
 241 Ile Asn Lys Ala Ser Asn Ser Asn Lys Ile Arg Leu Glu Lys Gly Arg
 242
              100
                                105
                                                  110
 243 Leu Tyr Gln Ile Lys Ile Gln Tyr Gln Arg Glu Asn Pro Thr Glu Lys
 244 115
                            120
 245 Gly Leu Asp Phe Lys Leu Tyr Trp Thr Asp Ser Gln Asn Lys Lys Glu
      130
                         135
                                           140
 247 Val Ile Ser Ser Asp Asn Leu Gln Leu Pro Glu Leu Lys Gln Lys Ser
                     150
                                        155
 249 Ser Asn Ser Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val Pro
                 165
                                    170
 251 Asp Arg Asp Asn Asp Gly Ile Pro Asp Ser Leu Glu Val Glu Gly Tyr
 252 180 190
 253 Thr Val Asp Val Lys Asn Lys Arg Thr Phe Leu Ser Pro Trp Ile Ser
                            200
        195
                                     205
 255 Asn Ile His Glu Lys Lys Gly Leu Thr Lys Tyr Lys Ser Ser Pro Glu
                          215
                                           220
 257 Lys Trp Ser Thr Ala Ser Asp Pro Tyr Ser Asp Phe Glu Lys Val Thr
```

RAW SEQUENCE LISTING ERROR SUMMARY PATENT APPLICATION: US/09/848,909A

DATE: 05/20/2003 TIME: 17:26:38

Input Set : A:\00742.060002.SEQLIST.TXT
Output Set: N:\CRF4\05202003\1848909A.raw

## Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:19; Xaa Pos. 397
Seq#:23; Xaa Pos. 427